

Remarks

The various parts of the Office Action (and other matters, if any) are discussed below under appropriate headings.

Claim Rejections - 35 USC § 101

Claims 19 was rejected under 35 U.S.C. § 101 because the claimed invention was directed to non-statutory subject matter. Claim 19 has been amended for clarity, thereby rendering moot the rejection. Accordingly, the rejection should be withdrawn.

Claim Rejections - 35 USC § 102

Claim 1, as amended, recites a method for computer-assisted medical navigation or pre-operative treatment planning that includes detecting a position of a patient or a part of a patient's body, detecting positions of medical treatment devices or treatment-assisting devices, creating patient-specific body structure data, the body structure data being adapted from a three-dimensional generic model, and assigning the detected positions to the body structure data.

Claim 19, as currently amended, recites a computer program which, when executed, carries out a method corresponding to the method recited in claim 1.

Claims 1, 3, 6, 7, and 12-19 stand rejected pursuant to 35 U.S.C. § 102(b) as being anticipated by Van Der Brug, U.S. Patent No. 5,954,648. Van Der Brug generally discloses an image guided surgery system in which a computer 21 computes the position of a surgical instrument during surgery. The computer also computes a corresponding position of the surgical instrument in an earlier-generated image, such as a CT or MRI image, stored in memory 23. An image processor 22 generates an image signal which combines the earlier data and the corresponding position of the surgical instrument (e.g., col. 4, ln. 2-13 and 39-41).

Van Der Brug is representative of an example of a device having deficiencies of which the claimed invention may overcome. Prior to surgery, Van Der Brug's disclosed method may involve the patient being subjected to costly measures and additional radiation loads to produce the earlier-generated images. (See application at pg. 2, ln. 1-5.) Van Der Brug is not understood to disclose or fairly suggest the use of a "three-dimensional generic model", as recited in amended independent claims 1 and 19, and the various dependent claims.

For at least these reasons, claim 1, dependent claims 2-18 and claim 19 are not anticipated by Van Der Brug, and therefore the rejection of these claims should be withdrawn.

Claims 1-19 also stand rejected pursuant to 35 U.S.C. § 102(e) as being anticipated by Simon et al., U.S. Patent No. 6,470,207 B1. Simon et al. generally discloses an image guided surgery system in which a tracking sensor detects the position of a surgery instrument. In one embodiment, a representation of an instrument is overlaid onto a pre-acquired image, such as a previously obtained fluoroscopic x-ray image of the patient (e.g., col. 8, ln. 30-36; col. 14, ln. 5-11).

While Simon et al. discloses use of "atlas data"¹ as the source of a previously-obtained image, Simon's disclosed use of atlas data differs from the use of the generic model of the claimed invention. As clarified in amended claims 1 and 19, the generic model further is adapted to create patient-specific body structure data. In contrast, Simon et al. is not understood to disclose or fairly suggest the step of creating patient-specific body structure data, the body structure data being adapted from a three-dimensional generic model, as recited in amended independent claims 1 and 19 and the various dependent claims.

In addition, certain dependent claims recite other features not anticipated by Simon et al. For example, one or more dependent claims recite the claimed "adapting" as being accomplished by linking the three-dimensional generic model to various forms of existing patient-characteristic data. (See dependent claims 2, 6-11, and 13-18.)

For at least these reasons, claims 1-19 are not anticipated by Simon, and therefore the rejection should be withdrawn.

Claims 1-19 also stand rejected pursuant to 35 U.S.C. § 102(e) as being anticipated by Schweikard et al., U.S. Patent Application Publication No. 2004/0082849 A1. Schweikard et al. generally discloses an image guided surgery system containing a tracking system to track a surgical instrument. A plurality of two-dimensional images, e.g. patient x-rays, are processed by a central computer 22 to generate a three-dimensional approximation model of an anatomical part. The computer then represents the part as a geometrical structure to be visualized relative to the surgical instrument. (Para. 0041, 0044.) In one embodiment, the approximation model can be refined by increasing the number of two-dimensional images from which

¹ Simon et al. defines atlas data as "non-patient specific three-dimensional data describing a 'generic' patient." (Co. 14, ln. 19-20.)

it is generated (para. 0049). Alternatively, the approximation model can be refined by additionally using a pre-operatively determined MR data set of the part (para. 0050).

Schweikard et al. is not understood to disclose or fairly suggest the use of a "three-dimensional generic model," as is recited in claim 1. It is respectfully submitted that Schweikard's disclosed use of a pre-operatively determined MR data set differs from and is not suggestive of the claim 1 recitation of creating patient-specific body structure data, where the body structure data is adapted from a three-dimensional generic model. Like in the method disclosed in Van Der Brug, the method disclosed in Schweikard may involve the patient being subjected to costly measures and additional radiation loads to produce the pre-operative MR data set.

For at least these reasons, claims 1-19 are not anticipated by Schweikard et al., and therefore the rejection of these claims should be withdrawn.

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance of claims 1-19.

Respectfully submitted,

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